REMARKS

The Office Action dated October 21, 2005 in this Application has been carefully considered. Claims 22-42 are pending. The above amendments and the following remarks are presented in a sincere attempt to place this Application in condition for allowance. Claims 1-21 have been cancelled in this Response. Claims 22-42 have been added in this Response. Reconsideration and allowance are respectfully requested in light of the above amendments and following remarks.

The Specification has been amended to correct a few errors in the present Application. The list of cross-referenced patent applications has also been amended to accurately represent the list of related patent applications. Applicants submit that these amendments to the specification do not provide new subject matter, and that these amendments are supported by the original Application as filed.

Claim 13 stands objected to because of an informality. Claim 13 has been cancelled in this Response. Accordingly, Applicants respectfully submit that the objection to Claim 13 is moot.

Claim 1 stands provisionally rejected under "the judicially created doctrine of obviousness-type double patenting" as being unpatentable over Claim 1 of co-pending application 10/655,365. Claim 1 has been cancelled in this Response. Accordingly, Applicants respectfully submit that the provisional double patenting rejection is overcome. Further, Applicants stand ready to file a terminal disclaimer should conflicting claims in fact become patented or allowable.

Claims 1-21 stand rejected under 35 U.S.C. §102(e) by U.S. Patent No. 6,425,058 by Arimilli et al. ("Arimilli"). Insofar as they may be applied against the Claims, these rejections are traversed and overcome.

Regarding Claim 1, Arimilli was cited as assertedly fully disclosing the following:

(1) "a software controlled data replacement system for a cache, the system employing a memory region and associated class identifier and a tag replacement control indicia" (*citing* Arimilli, col. 7, lines 5-55);

comprising (2) "a replacement management table" (*citing* Arimilli, Figs. 5, 7; col. 6, lines 1-27; "describes virtual caches management whereas each virtual cache element, 'a row', is further partitioned into multiple types and set associative");

(3) "employable to read the class identifier (virtual caches ID) to create the tag replacement control indicia" (*citing* Arimilli, Figs. 5, 7; col. 5, line 65 to col. 6, line 27; "#130 a virtual cache's ITF setting to information type field" and "describes using virtual cache value in control register 132 to select a virtual cache's ITF setting; the ITF setting determines cache partitioning and set associative for replacement of data in a virtual cache; Arimilli's column 6 lines 53-66 further describes using virtual caches' performance to determine the replacing of virtual caches"); and

(4) "the cache, comprising a plurality of sets, employable to disable a replacement of at least one of the plurality of sets as a function of the tag replacement control indicia" (*citing* Arimilli, Fig. 5; col. 6, lines 5-27; "describes the virtual caches' sets can be managed to be overlapped or disjoined"). Office Action, Page 4.

Claims 1-21 have been cancelled in this Response. Accordingly, Applicants respectfully submit that the rejections of Claims 1-21 are moot.

New Claims 22-42 have been added in this Response. New Claim 22 recites one of the distinguishing characteristics of the present invention, namely, "a range register coupled to [an] L1 cache," "the range register configured to generate a class identifier in response to a received requested address and to transmit the requested address and class identifier to a replacement management table coupled to the range register" and "the replacement management table

configured to generate L2 tag replacement control indicia in response to a received requested address and class identifier." Support for this Amendment can be found, among other places, in Figure 1 and the accompanying description of the original Application.

Arimilli does not suggest, teach, or disclose the replacement management table generating L2 cache tag replacement control indicia in response to a received class identifier, the class identifier generated in response to a requested address. Specifically, Arimilli teaches "information type fields" in an L2 "cache directory" that specify which type(s) of information an associated cache line can store. Arimilli states, "information type field 78 [of each directory entry] specifies which type(s) of information the associated set can store." Arimilli, col. 5, lines 47-49. Further, "The cache lines stored within information array 64 are recorded in cache directory 62, which contains one directory entry for each set in information array 64." Arimilli, col. 5, lines 23-25.

Accordingly, the information type field of Arimilli's L2 cache determines which information type or types an associated cache set can store. In contrast, in the system as recited in Claim 22, the L2 cache is "configured to assign replacement eligibility of at least one set of cache lines in the L2 cache in response to received L2 tag replacement control indicia." As described above, the L2 tag replacement control indicia are generated "in response to a received requested address and class identifier." Thus, in the system as recited in Claim 22, replacement eligibility of one or more sets of a cache is assigned in response to the tag replacement control indicia. Rather than assigning information types that sets can store, the present invention identifies eligible replacement sets based on an address and class identifier.

Similarly, new Claim 29 also recites one of the distinguishing characteristics of the present invention, namely, "setting a class identifier to a predetermined value associated with a predetermined range of addresses if the requested address falls within the predetermined range of

addresses," "generating tag replacement control indicia in response to the class identifier," and "setting replacement eligibility of a set in the L2 cache in response to the tag replacement control indicia." Support for this Amendment can be found, among other places, in Figure 7 and the accompanying description of the original Application.

In view of the foregoing, it is apparent that the cited reference does not disclose, teach or suggest the unique combinations recited in Claims 22 and 29. Applicants therefore submit that new Claims 22 and 29 are clearly and precisely distinguishable over the cited reference in a patentable sense, and are therefore allowable over this reference and the remaining references of record. Accordingly, Applicants respectfully request that new Claims 22 and 29 be allowed.

Claims 23-28 depend on and further limit Claim 22. Claims 30-37 depend on and further limit Claim 29. Hence, for at least the aforementioned reasons, these Claims would be deemed to be in condition for allowance. Applicants respectfully request that dependent Claims 23-28 and 30-37 also be allowed.

New Claims 38 and 41 recite similar limitations as new Claim 29. Hence, for at least the aforementioned reasons, these Claims would be deemed to be in condition for allowance. Applicants respectfully request that new Claims 38 and 41 also be allowed.

Claims 39 and 40 depend on and further limit Claim 38. Claim 42 depends on and further limits Claim 41. Hence, for at least the aforementioned reasons, these Claims would be deemed to be in condition for allowance. Applicants respectfully request that dependent Claims 39-40 and 42 also be allowed.

Finally, cancelled Claim 1 was provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claim 1 of co-pending application serial number 10/655,365, which recited, according to the Office Action: "A software

controlled data replacement system for a cache, the system employing a memory region and associated class identifier and a tag replacement control indicia, comprising: a replacement management table, employable to read the class identifier to create the tag replacement control indicia; and the cache, comprising a plurality of sets, employable to disable a replacement of at least one of the plurality of sets as a function of the tag replacement control indicia." *See* Office Action, Pages 2-3.

As described above, Claim 1 has been cancelled in this Response. Applicants respectfully submit that the new Claims 22-42 added in this Response overcome the provisional obviousness-type double patenting rejection with respect to the Claim 1 of co-pending application serial number 10/655,365 as recited above. Accordingly, Applicants respectfully request that this provisional rejection be withdrawn.
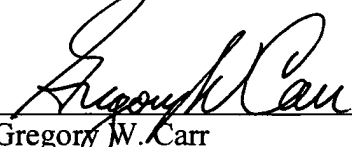
Applicants have now made an earnest attempt to place this Application in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request full allowance of Claims 22-42.

Applicants do not believe that any fees are due; however, in the event that any fees are due, the Commissioner is hereby authorized to charge any required fees due (other than issue fees), and to credit any overpayment made, in connection with the filing of this paper to Deposit Account No. 50-0605 of CARR LLP.

Should the Examiner deem that any further amendment is desirable to place this application in condition for allowance, the Examiner is invited to telephone the undersigned at the number listed below.

Respectfully submitted,

CARR LLP,

Dated: __1/18/06__

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